

## CLAIMS

I claim:

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- 1    1.    A seal assembly, comprising:  
2        a thermoplastic seal;  
3        a preload member adapted to apply a force to and induce cold flow of the thermoplastic  
4                seal.
  
- 1    2.    The seal assembly of claim 1, further comprising a ferrule abutting an end of the  
2        thermoplastic seal.
  
- 1    3.    The seal assembly of claim 1, wherein the ferrule is formed of a metal material.
  
- 1    4.    The seal assembly of claim 1, wherein the thermoplastic seal has a slot formed in an end  
2        thereof.
  
- 1    5.    The seal assembly of claim 4, further comprising a ferrule having a protruding, tapered  
2        end abutting the end of the thermoplastic seal.
  
- 1    6.    The seal assembly of claim 1, wherein the preload member is a threaded mandrel.

- 1    7.    The seal assembly of claim 1, further comprising a spring adapted to maintain a force on  
2        the thermoplastic seal.
- 1    8.    The seal assembly of claim 1, wherein the thermoplastic seal has a tensile modulus equal  
2        to or greater than 500,000 psi at room temperature.
- 1    9.    The seal assembly of claim 1, wherein the thermoplastic seal has a flexural modulus equal  
2        to or greater than 500,000 psi at room temperature.
- 1    10.   The seal assembly of claim 1, wherein the thermoplastic seal comprises PEEK.
- 1    11.   The seal assembly of claim 1, wherein the thermoplastic seal comprises PEK.
- 1    12.   The seal assembly of claim 1, wherein the thermoplastic seal comprises PPS.
- 1    13.   The seal assembly of claim 1, wherein the thermoplastic seal comprises PEKEKK.
- 1    14.   The seal assembly of claim 1, wherein the thermoplastic seal comprises PET.
- 1    15.   A method for sealing, comprising:  
2        providing a seal having a component formed of a thermoplastic;  
3        inducing deformation of the component to create a fluidic seal.

- 1    16.    The method of claim 15, further comprising applying a preload to the seal to induce the  
2           deformation.
- 1    17.    The method of claim 15, wherein the deformation comprises cold flow.
- 1    18.    The method of claim 15, wherein the deformation comprises crimping.
- 1    19.    The method of claim 15, wherein the deformation comprises clamping.
- 1    20.    The method of claim 15, further comprising maintaining the preload on the seal.
- 1    21.    The method of claim 15, wherein the thermoplastic has a tensile modulus equal to or  
2           greater than 500,000 psi at room temperature.
- 1    22.    The method of claim 15, wherein the thermoplastic has a flexural modulus equal to or  
2           greater than 500,000 psi at room temperature.
- 1    23.    The method of claim 15, wherein the thermoplastic comprises PEEK.
- 1    24.    The method of claim 15, wherein the thermoplastic comprises PEK.
- 1    25.    The method of claim 15, wherein the thermoplastic comprises PPS.

- 1    26.    The method of claim 15, wherein the thermoplastic comprises PEKEKK.
- 1    27.    The method of claim 15, wherein the thermoplastic comprises PET.
- 1    28.    A seal, comprising:  
2        a ferrule; and  
3        an adjacent seal member deformed by cold flow about at least a portion of the ferrule.
- 1    29.    The seal of claim 28, wherein the seal comprises a thermoplastic.
- 1    30.    The seal assembly of claim 29, wherein the thermoplastic has a tensile modulus equal to  
2        or greater than 500,000 psi at room temperature.
- 1    31.    The seal assembly of claim 29, wherein the thermoplastic has a flexural modulus equal to  
2        or greater than 500,000 psi at room temperature.
- 1    32.    The seal assembly of claim 29, wherein the thermoplastic comprises PEEK.
- 1    33.    The seal assembly of claim 29, wherein the thermoplastic comprises PEK.
- 1    34.    The seal assembly of claim 29, wherein the thermoplastic comprises PPS.
- 1    35.    The seal assembly of claim 29, wherein the thermoplastic comprises PEKEKK.

1     36.     The seal assembly of claim 29, wherein the thermoplastic comprises PET.

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1     37.     The seal of claim 28, further comprising a preload member.

1     38.     A seal, comprising:

2             a housing;

3             a deformed thermoplastic seal member that provides a fluidic seal against the housing and

4             a component.

1     39.     The seal of claim 38, wherein the component is a control line.

1     40.     The seal of claim 38, wherein the seal member has a tensile modulus equal to or greater

2             than 500,000 psi at room temperature.

1     41.     The seal of claim 38, wherein the seal member has a flexural modulus equal to or greater

2             than 500,000 psi at room temperature.

1     42.     The seal of claim 38, wherein the seal member comprises a PEEK material.

1     43.     The seal of claim 38, wherein the seal member comprises a PEK material.

1     44.     The seal of claim 38, wherein the seal member comprises a PPS material.

1 45. The seal of claim 38, wherein the seal member comprises a PEKEKK material.

1 46. The seal of claim 38, wherein the seal member comprises a PET material.